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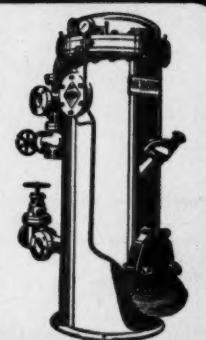
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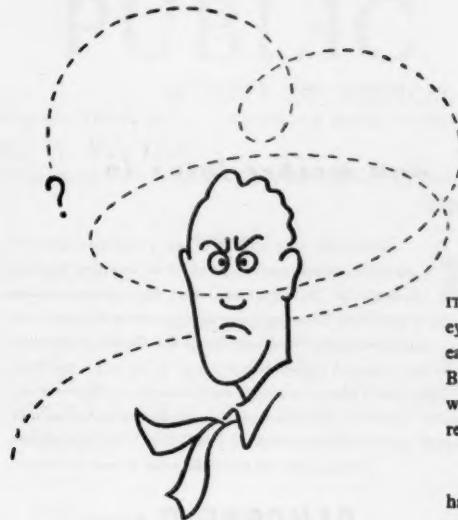
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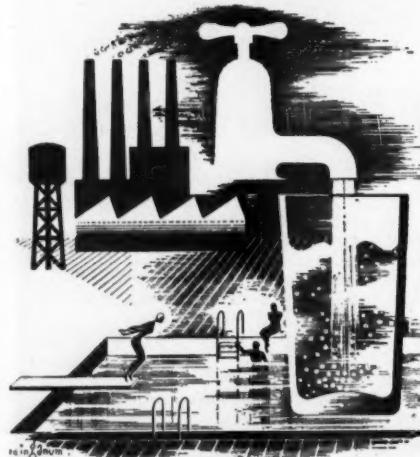
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EDITORIAL

Adoption

A legal process that radically affects the lives of upwards of 20,000 children every year in England and Wales is one that must be of interest and concern to every Medical Officer of Health. That process is adoption which, legalised in 1927, has rapidly become more popular until to-day it is almost a fashion.

Miss Margaret Kornitzer's book, "Child Adoption in the Modern World,"* is a fascinating account of almost every aspect of adoption, including foreign practice and experience. As Press Officer of the Standing Conference of Adoption Societies she is in a good position to put the case for adoption and to describe both the legal and practical problems involved and she has done it well.

Most of us would support the view that where the child is inevitably to be separated permanently from the mother and its home adoption is almost invariably the best course in the interest of the child: but we think Miss Kornitzer starts off on the basis that in almost every case of illegitimacy adoption is the solution of choice if any difficulty arises. With this we disagree. Thus she writes: "But although a mother will sometimes find it possible to manage with a baby for a while, with the years she usually finds it not easier but more difficult. Unless she is perfectly sure of her own courage and unimpaired earning power—which as a rule means being sure of her relations and friends as well as of herself—it is often better to decide on adoption as early as possible, dreadful wrench though this is." Reflections of that sort might well be advanced against adoption itself and with as little reason. We have advocated in this journal that every practical step should be taken to keep the mother and infant together: we believe that the health authorities are, generally speaking, failing in this matter, failing to provide the help they could offer by way of hostel accommodation, adequate day nursery provision and other forms of assistance, and that the State itself could do much more than it does financially to help the unmarried mother. To keep mother and baby together does not encourage profligacy or illegitimacy—it would do quite the reverse.

Adoption is a simpler course than what we advocate, and that in itself should make us beware of accepting it blindly as the best thing. Everyone knows that arrangements for adoptions are often initiated before the baby is born, and that we believe is thoroughly bad practice. In law the mother cannot give legal consent for adoption before the baby is six weeks old, a wise provision, but its purpose is

frustrated when the baby is placed at an earlier date, as is sometimes done.

The demand for babies now exceeds the number for whom adoption is sought. Figures are not available for this country but if our experience matches Australia's, and we see no reason to believe to the contrary, a very considerable proportion of adoptions take place before the first birthday.

One difficult problem is that of telling the child he has been adopted. It is the crucial one in many cases, the solution to which may make all the difference between, on the one hand, a happy child and happy family and, on the other, general wretchedness. Most of us agree that the child should be told early in its new life, naturally, affectionately, truthfully and prudently.

There were in 1949 17,331 adoptions in England and Wales; and there were (though the figures are not directly related at all) some 35,000 illegitimate children born. It must be remembered that many adoptions are by mothers of their own illegitimate children—up to 70% in some areas—to secure to the children certain advantages otherwise denied them, such as status for pension and family allowance purposes. We do not know what proportion of adoptions were of children of unmarried women. But we find it difficult to understand why adoption should be necessary except perhaps in regard to inheritance as of right of the mother's husband's goods. It has been said that there are no illegitimate children but only illegitimate parents. Everything that is possible should be done for the child, and in our view this involves much help for the mother, at least in the child's early years when the basis of his health, both mental and physical, is being laid.

That deprived children have been better cared for since 1948 is an undisputed fact. But it is worth emphasising that local authorities have spent much more, and have been compelled by the Home Office to spend much more, than they were willing to do when the care of their children largely fell on the Health Department. Sir Ernest Cassels is reported to have said at the outset of World War I, "If money is wanted, money will be found," but that is not true in the local health services.

To revert to adoption: one thing "stands out a mile," and that is how little we really know about the late results of adoption. The register of adopted children is open for inspection but quite properly full regard must be given to the right of both the child and its substitute parents to privacy and security: that makes it difficult to get the necessary information. It is important, however, both to this and succeeding generations to know the full effects of adoption. The National Association for Mental Health is

understood to be undertaking research on these lines : we feel sure that this will be an important and rewarding task.

Cancer Registration

In 1940 the General Register Office published a booklet by Dr. Percy Stocks on "Cancer Registration in England and Wales" (Studies on Medical and Population Subjects, No. 3). In a description of the Cancer Records Scheme and its purpose was followed by a series of tables showing for cancer of each part of the body the number of patients registered in 1945 and 1946. Among the analyses made was one showing the condition at the end of a year of patients with primary cancer.

In supplementary tables to that Study, now published,* are given the corrected Survival and Recovery Rates at the first and second and provisional rates at the third anniversaries of treatment for cases of primary cancer registered during 1945 and 1946, at the more important sites.

These tables, in conjunction with the original booklet, give useful information on the prospects of survival of cancer patients in relation to the different sites of the disease, its several stages of development and the various methods employed in treatment. A complete and accurate picture cannot, however, be given until the ultimate aim of registering and following up all new cases of cancer is achieved.

Further information will be published later when details about the patients' condition at the end of four and five years become available.

Decentralisation

Shortly after the publication in this journal† of the short statement of policy by the Society on decentralisation of N.H.S. Part III functions there has followed that of a study‡ carried out by an officer of the Institute of Public Administration, Miss E. W. Cohen, which covers both delegation under the Education Act, 1944, and decentralised administration under the National Health Service Act, 1946. As Professor William Robson points out in a foreword, the two recent trends in British local government have been the transfer of services from L.A.s to central departments and public corporations and the shift of power in administrative counties from the districts to the county councils. By a typical English device actuated by the instinct to compromise (or perhaps fair play?) the shift of powers to the counties has been qualified by a return of limited administrative functions to the smaller units, in the hope that local interest will be maintained.

Miss Cohen and the Institute have performed a useful service in preparing this first survey of the present position regarding delegation or decentralisation of functions under the Education Act, 1944, and National Health Service Act, 1946 (not forgetting Circular 118/471). This Society is naturally inclined to look at the problem from the point of view of medical officers of health whose careers have been so rudely jolted by recent statutes. But the whole matter also lies very close to the well- or ill-being of local government and deserves close study by all concerned, whether elected representatives or officers. To quote again from Prof. Robson's foreword, "If delegation is to be no more than mere agency, it will contain neither the substance nor the spirit of our system of local self-government."

* Studies on Medical and Population Subjects. Supplement to No. 3, Cancer Registration in England and Wales—Third Year Recovery and Survival Rates. H.M.S.O., price 1s. 3d. net (or by post from P.O. Box 569, London, S.E.1 ; price 1s. 4½d.).

† PUBLIC HEALTH (June, 1952). 65, 161.

‡ Autonomy and Delegation in County Government. A study of delegation in education and local health administration. By Emmeline W. Cohen. (Pp. 81. Price 6s. net. The Society of M.O.H. holds a limited number of copies available to members at the special price of 4s. 6d. post free. London: Institute of Public Administration, 76a New Cavendish Street, W.1, 1952.

TUBERCULOSIS AND THE MEDICAL OFFICER OF HEALTH *

By F. G. BROWN, M.B., B.C.H., D.P.H.
Medical Officer of Health, Wanstead & Woodford M.B. ;
Area Medical Officer, Essex.

When you honoured me by electing me your President, I realised that one of my duties was to deliver an address. Rather than give a formal presidential address which could not be followed by a discussion, I thought it would be preferable for me to speak on a subject which is one of our chief concerns in the public health world to-day, namely, tuberculosis, and that, following my talk, members might express their views, not only from the angle of the Medical Officer of Health, but also from that of the Chest Physician.

I am one of those who entered the sphere of general public health having graduated in the tuberculosis service. Indeed, had it not been for the war, I should, in all probability, be doing clinical tuberculosis work to-day. It is of interest to look back over the past 20 years and to observe the changes which have taken place in the tuberculosis service, not only in administration and in improved methods of treatment, but also in the outlook of the patient. Prior to the National Health Service Act of 1946, the whole of the service in both its preventive and curative aspects was vested in the L.H.A., others concerned being the G.P., certain voluntary hospitals specialising in diseases of the chest, and voluntary organisations carrying out work of care and after-care. Now, as we are only too well aware, the preventative and curative fields have, in the main, been separated by the establishment of the Regional Hospital Boards.

When I was first concerned with the treatment of patients in sanatoria suffering from pulmonary tuberculosis the auto-intoxication theory of the late Marcus Patterson was dying very hard. Patients with extensive active bilateral disease were allowed to get out of bed and take exercise, provided their temperatures were below 99°. Regular x-ray control was the exception rather than the rule. Indeed, the asking for an x-ray examination to be carried out on a dispensary patient as an aid to diagnosis was held to be a confession of indifferent clinical ability. Collapse therapy was in its infancy and was often carried out in institutions without x-ray plant. In the early 1930s rapid strides were made in the improving of equipment in many sanatoria and hospitals. Artificial pneumothorax treatment was greatly advanced by the division of adhesions and chest surgery was beginning to come into its own. Above all, the importance of prolonged bed rest, irrespective of what active treatment was in operation, was being realised. With the onset of war in 1939 came a great setback. All patients who could get out of bed and walk were discharged from institutions to their homes. Not only was their treatment interrupted with disastrous results, but they were the means of spreading infection throughout the community at large. When admissions were again possible, many institutions had to take in cases from the armed forces not normally residing in the districts which the institution served. Foreign troops, particularly Poles, which had arrived in the country, were found to be suffering from tuberculosis and to require institutional treatment. During the war the discovery of the sulpha drugs and penicillin caused a greatly reduced mortality in chest surgery where, previously, the advent of sepsis had often led to chronic invalidism and to fatal results. In recent years the use of antibiotic drugs in selected cases has brought about the arrest of spread of disease and has greatly lessened infectivity by rendering the sputum negative. The use of streptomycin, combined with PAS, has minimised toxic symptoms. These drugs can be of benefit as a preliminary to, or an accompaniment of, active methods of treatment. There is, however, the danger of the development of streptomycin-resistant strains of the

* Presidential Address to the Home Counties Branch, Society of M.O.H., London, March 14th, 1952.

tubercle bacillus and anyone becoming infected with the streptomycin-resistant tubercle bacillus cannot be treated with this important drug.

In pre-war days it had been my impression and also, I think, that of those with whom I was working, that even in patients who had responded well to treatment, the ultimate prognosis was poor. Cases with a cavity in the lung were expected to die within five years. Although I have been unable to carry out statistical research on this matter, I have been gratified to observe that many patients whom I treated 12 to 15 years ago, some of whom had extensive bilateral disease, have kept well and are in full employment.

Regarding the attitude of the patient himself, whereas previously it was a frequent occurrence for him to refuse to enter a sanatorium or to take his discharge against advice, I am informed by my Chest Physician colleagues that these are now rare events. This would appear to be due partly to the improvement which has taken place in our social services and also to the more enlightened attitude with which the disease is now regarded by the general public. Further, it is probable that the difficulty of admission owing to lengthy waiting lists has, from the patient's point of view, placed a higher value on the sanatorium bed.

Contrasting the tuberculosis dispensary with the present-day chest clinic, we find that the Chest Physicians are, in the main, officers of Regional Hospital Boards, and the non-technical administrative staff are employed by Hospital Management Committees, the nursing staff working from these clinics being employed by Local Health Authorities on the staff of the Medical Officer of Health. If the preventative aspects of the work are to be maintained, it is obvious that the closest possible liaison must exist at all levels. The M.O.H. must be in constant touch with the Chest Physician and opportunity afforded for discussion on problems of individual cases. In some areas monthly meetings are held to enable all persons engaged on tuberculosis work to review their problems. This appears to be an ideal arrangement where the areas of Chest Physician and M.O.H. are co-terminous but, owing to the amount of time which would be involved, might not be easy where the M.O.H. has several Chest Physicians working in his area.

This brings me to the work of the tuberculosis nurse or health visitor. Being on the staff of the M.O.H. and working with the Chest Physician, she is the obvious liaison officer. In some areas, particularly those more densely populated, these nurses are employed solely on tuberculosis work, while in others this work is combined with the normal duties of a health visitor. While realising that conditions in different areas must necessarily vary, it seems to me that the latter arrangement is preferable, always provided that the area covered by an individual health visitor is sufficiently small for her to be able to devote adequate attention to all aspects of her work. Nowadays she is not merely concerned with child health, but has become adviser to the family on all matters pertaining to their well-being. Surely it is desirable that a person who is known to the family should visit and advise on tuberculosis rather than that this advice should be given by a stranger to the home. It may be that, in very densely populated areas, of which I have had little personal experience, such an arrangement is impracticable and that full-time tuberculosis health visitors must be employed. Where this is done it is essential that there is ample opportunity for exchange of information between the tuberculosis health visitor and her colleague. There should also be a liaison between health visitor and district nurse as the services of the latter are being employed on visits to tuberculosis cases more extensively than ever before. It is necessary that every health visitor, who is concerned with tuberculosis, should attend regularly at chest clinic sessions, otherwise she will lose interest in the work. She should have access to all clinic notes and correspondence relating to cases in her area.

It has been stated that, under the new set up, the Chest Physician will tend to concentrate on his clinical work to the detriment of prevention. I do not think this to be

so in the case of the older Chest Physicians, who were working as tuberculosis officers prior to the appointed day and who have been well grounded in public health, but I do feel that there is a risk that new appointments may be made by Regional Hospital Boards of persons whose background is purely clinical, and who have not had a sufficient knowledge of social medicine. It might be desirable to insist on a qualification such as the Certificate in Public Health.

Now that the tuberculosis dispensary has been renamed "chest clinic," some confusion may arise, the chest clinic being regarded in the same light as the hospital out-patient department. Lay administrators who have not had previous experience in tuberculosis administration do not always understand the extent of the preventive work which radiates from the chest clinic and may tend to misinform members of Hospital Management Committees who, consequently, will get an erroneous impression of the wide field of activities of the centre. I feel it is important that these members should be kept fully cognisant that the work carried out at the chest clinics is not merely curative.

One of the most important duties of the M.O.H. is concerned with the examination of contacts. Semple has stated that, in the city of Liverpool in 1949, there were 1,619 primary notifications of respiratory tuberculosis, and that only 1,203 contacts were examined, despite a home visit having been made in each case by a tuberculosis health visitor. While it is comparatively easy to persuade child contacts to attend for examination, much difficulty is often experienced with the adolescents, who are especially prone to develop pulmonary tuberculosis and for whom much can be done if the disease is detected in its early stages. A common source of infection is the elderly person with a chronic cough of many years' standing. In some areas a joint circular letter from the M.O.H. and Chest Physician has been sent to G.P.s impressing on them the importance of having this type of patient examined at the chest clinic. To ensure that contacts are examined to a maximum degree the greatest possible attention to this work must be given by the health visitor, backed, where necessary, by the M.O.H.*

The question of housing and tuberculosis has been discussed very fully at a recent meeting of the Society* and I do not propose to dwell on it now. I must, however, refer to the problem as it affects large housing estates, especially those of the L.C.C. situated in the home counties, where the proportion of notified cases of tuberculosis per house on some of these estates is as high as one in seven. Many of these cases have had long periods of treatment in hospital and sanatoria as a result of which their disease has become quiescent. Owing to the considerable financial burden due to low wages, high rents, expense of travelling, etc., to which these people are being subjected, I feel there is a serious risk that cases may break down. I think it is most important before any person is rehoused on one of these estates that it should be ascertained whether he can really afford to live there. If this cannot be proved, then rehousing should be effected in inner London where rents are lower and where the expense and strain of travelling long distances to work will not be so likely to bring about reactivation of the disease.

Largely, owing to shortage of nursing staff, waiting lists for sanatoria are still lengthy and it is most necessary to make the best use of all available beds. It is essential that the recently diagnosed early case, which is likely to respond to treatment, should obtain a bed as soon as possible. For many of these cases a short term in a sanatorium would suffice. Where home conditions are satisfactory, this type of case can continue treatment at home on sanatorium lines, the service of the D.N. and the domestic home help being utilised. It appears most desirable that, where possible, patients should be admitted to institutions which are in the vicinity of their homes. Not only would this ensure continuity of supervision and treatment by the Chest Physician, but relatives would be enabled to visit more easily. Many sanatorium beds are now occupied by

intermediate chronic cases not requiring active treatment or skilled nursing. It is my opinion that the sanatorium is not the place for this type of case which should be accommodated in hostels provided by L.A.s under the power of Section 28 of the National Health Service Act. Few such hostels exist at present, and it is to be hoped that, when the necessary funds and materials are available, schemes will be developed along these lines. Many beds in fever hospitals are no longer required for their original purpose, and there appears to be a tendency to utilise these beds for cases of a non-infectious nature, e.g., chronic sick or medical cases. To what better use could they be put than the admission of the tuberculous? Where facilities for treatment are not possible, these beds might be occupied by the chronic bedridden type of case. Many M.O.H.s are members of Hospital Management Committees and I would suggest that they advise strongly against the use of fever hospital beds for other than infectious cases.

The Minister of Health, in Circular (R.H.B.)64/50, issued in July, 1950, stated that he deemed it necessary to augment the insufficient resources of sanatoria and tuberculosis hospitals by the use of a proportion of beds in general hospitals for tuberculous cases, and asked Regional Hospital Boards to apportion for the admission of cases of respiratory tuberculosis as many beds as reasonably possible in suitable general hospitals. It is now almost two years since this proposal was made and a number of beds has been made available for tuberculous cases in these hospitals. However, the tuberculous case requires special care and understanding and these, in the main, are not forthcoming in the general hospitals. A better solution would appear to be the regrouping of fever hospitals, so that some of these could be made available entirely for the tuberculous. The nursing staff could be seconded from a general hospital in the same group. The waiting list for cases requiring chest surgery is, in some areas, as long as three years. Could not some fever hospitals be converted into chest surgical units of, say, 100 beds? The same circular states that, with the present shortage of beds, the available accommodation must be used as advantageously and economically as possible and goes on to recommend that the use of beds should be limited, so far as practicable, to recoverable cases. As, at present, there is seldom a suitable institution to which the chronic infectious non-recoverable case may be sent, in view of this recommendation, may there not be a tendency on the part of Chest Physicians to discharge infectious cases to their homes?

Home treatment of the tuberculous is placing a greatly increased demand on the services of the district nurse. Many of these patients are receiving lengthy courses of streptomycin, which necessitates frequent visits. A large number of injections has to be given over a small area of the body, and I think it is important that these nurses should receive some instruction regarding the technique of the administration of this drug. I already know of one unfortunate incident when a patient developed a degree of foot drop, the result of a misplaced injection.

The re-employment of the tuberculous patient calls for the closest possible liaison between chest clinic, L.H.A., Ministry of Labour, and industry. Ex-patients fall into two categories: those who can be allowed to return to their former employment either at once or by gradual stages of rehabilitation and those for whom an alternate means of employment has to be found. I am especially interested in the courses run by the Ministry of Labour for training in clerical duties because I think that, here, the M.O.H. can play a useful part. Whereas, formerly, a history of tuberculosis would debar a candidate from embarking on a career in local government with the benefit of superannuation, it is most gratifying to find that this is no longer the case. Further, it is the duty of every L.A. to employ a percentage of registered disabled persons. We are all aware of the difficulty of obtaining shorthand typists in our departments, and it would seem that here is a possible source of supply. Persons so employed at local council offices in the home counties would not be subjected to the strain of travel to inner London and, in addition to their supervision

at the chest clinics, their conditions of work and progress would be known to the M.O.H. either directly or through the head of another department.

It is disappointing to find that, in the case of Nationalised Industries, new candidates giving a history of tuberculosis are debarred from employment, this despite the fact that a person previously employed, who has contracted tuberculosis and recovered, is permitted to resume his duties. I understand that the Joint Tuberculosis Council is making strong representation on this matter.

In July, 1950, the Minister of Health in Circular 64/50 states that certain recommendations had been made to him by the J.T.C. regarding the protection of organised groups of children against the risk of infection by adults suffering from tuberculosis. These recommendations are to the effect that no person with respiratory tuberculosis should be engaged for employment which involves close contact with groups of children, unless and until the disease is certified as arrested. A candidate for employment should not be engaged until medical examination, including an x-ray of the chest, has been carried out. Also that persons whose employment brings them into close contact with groups of children should have an x-ray of the chest annually. These recommendations are now being implemented by L.H.A.s, the use of mass miniature radiography units being made wherever possible. It is disturbing to find that similar recommendations have not been forthcoming from the Ministry of Education. X-ray examination of all teachers on appointment, and thereafter at annual intervals, would do much to prevent spread of infection to children, and it is to be hoped that present difficulties in attaining this objective may soon be overcome. The cost of these examinations could be reduced by the installation of static mass miniature radiography units at the larger chest clinics.

Finally, B.C.G. vaccination, at present confined to those sections of the population who are especially at risk, and still largely in an experimental stage in this country, appears to hold out a great hope for the future. It must be emphasised that this is a preventative measure and that it is the duty of L.A.s, under Section 28 of the N.H.A. Act, to formulate schemes. Regarding segregation during the period of immunisation, special hostels should be set aside for these purposes and maintained by health departments of L.A.s. These hostels could also be used for emergency segregation of children as a temporary measure, e.g., when the mother has been diagnosed as suffering from pulmonary tuberculosis and is awaiting admission to sanatorium. Following the admission of the parent to hospital, these children will be removed from the hostel as they will have then become the responsibility of the children's officer.

ASSESSING MEN AND JOBS IN INDUSTRY*

By J. Gwynne Morgan, C.B.E., T.D., M.B., D.P.H.,
Chief Medical Officer, Mond Nickel Company, Ltd.

My subject is the practice of medicine within the factory and I will touch for a moment on the more intimate aspects of industrial medicine. It will be well, therefore, to describe briefly the industry with which I am connected, because the variety of occupations is such that I feel some of them may bear certain relationship to your work.

My company is engaged in the refining and fabrication of non-ferrous metals. We import a treated ore from Canada which contains a high percentage of nickel, copper, cobalt, together with precious metals such as silver, gold, platinum, iridium, palladium, rhodium, osmium and ruthenium. Our factories are located in the following centres: Clydach, South Wales—nickel refinery and chemical salts manufacture; the Midlands—rolling mills, casting departments and the building of electric furnaces; Scotland—the

* A paper read to the Services Group, Society of M.O.H., London, March 28th, 1952.

manufacture of tubes and turbine plates ; London—the refining of the precious metals.

The refining of nickel is done by what is called "The Carbonyl Process" and this is associated with a considerable toxic hazard. Nickel carbonyl closely resembles phosgene, which, you will remember, was a gas used in World War I. The primary consideration in the manufacturing or refining of nickel by this process is the provision of adequate supplies of carbon monoxide. The process consists of reducing nickel oxide to nickel by means of hydrogen and by volatilising this reduced nickel with carbon monoxide to form a nickel tetra carbonyl ; the reaction is a reversible one and, at a somewhat higher temperature, the carbonyl splits into carbon monoxide and nickel, the nickel being deposited in a very pure state. You will therefore realise that our greatest hazard is the escape of nickel carbonyl which is extremely poisonous.

Of primary importance is fitting the man in the job, by putting square pegs into square holes, thus increasing the worker's efficiency and contentment. To accomplish this I have introduced a categorisation scheme in my Company's works which forms part of the pre-employment medical examination, and I want to impress here that it is not a method for rejecting people. When a man has been examined, the management do not want to know, for instance, that such a man is suffering from aortic regurgitation or mitral stenosis as this would mean nothing to them ; also, it would be a breach of medical ethics if such details were made known to laymen. What concerns the management is what work the man can do and what work he should avoid. Both these conditions are fulfilled by the following scheme which is a modified Pulheems, as used in the army.

Assessing the Man

When a man appears for examination, a brief medical history is first taken ; this includes an account of past diseases, and of illnesses and of any wounds sustained during military service which may have affected the applicant. In addition, enquiries are made about previous occupational history, which is important in that it may suggest special examination, as, for example, an x-ray examination in the case of ex-miners, who may be suffering from pneumoconiosis or silicosis.

The patient is then examined and the results classified according to a simple code of seven letters—P, F, N, I, R, V, S. The letter P indicates physical powers, F shows locomotor efficiency, N conditions of the ear, nose and throat, I the intelligence and mental make-up, R conditions of the respiratory organs, V the visual standards, and S the skin conditions.

Each of the above letters has three or four degrees, as indicated by the figures 1, 2, 3 or 4. The individual letters will now be considered.

Code Letter P (Physical Capabilities)

Examination of the physical qualities gives one of the following results :-

P1. Age 19 to 45. Normal in all respects. Height/weight ratio, calculated from the Nylic Standard Table of Heights and Weights, normal.

P2. Covers ages up to 18 and men over 45 who have no abnormalities, but where, in the first case, full development has not yet been attained and, in the second case, middle-age is causing a tendency towards corpulence. It also includes men of 19 to 45 who are subnormal to a small degree. The height/weight ratio allows up to 10% disparity from standard.

P3. In this group is found the man who has slight organic lesions which are compensatable, but who is nevertheless not fit for heavy work. If an applicant for work, he should not be employed; if a long-service employee he should be considered for a lighter job. Not more than 25% disparity in height/weight standard.

P4. A man placed in this category has disabilities which are beyond repair; he is unfit for employment and, if already an employee, should be considered for a disability pension.

Code Letter F (Feet and Locomotion)

Here there are three grades :-

F1. No defects of the feet, no varicose veins, no deformities of the joints.

F2. Slight defects only, but which limit movement to some small degree and which will have to be watched in case they progress.

F3. Deformities of the feet and legs which have a definite effect on function and render the person unfit for any but sedentary work.

Code Letter N (Ear, Nose and Throat)

This is a most important group when the man has to be placed in a job in a chemical works, where the nose has to give first warning of escape of gas or fumes.

N1. This indicates complete normality of the ear, nose and throat.

N2. Indicates slight abnormalities which do not interfere with the sense of smell but may reduce hearing.

N3. Loss of sense of smell and other defects of hearing and grossly defective tonsils.

Code Letter I (Intelligence and Education)

The evaluation of the intelligence is an aspect of the medical examination which is not frequently mentioned. It is, however, of fundamental importance in assessing the worker's "job fitness," which is really the psychiatric aspect of the examination. Great care is necessary when intelligence tests are used ; they should be used only by people who are trained to evaluate the results and correlate them with those of the personal interview.

With the above facts in mind, the grading under this letter is as follows :-

I1. This includes men with a high standard of education and intelligence, technical men suitable for highly skilled work.

I2. Under this heading are placed those with normal, average intelligence and no apparent history of psychiatric illness.

I3. Persons having a low intelligence quotient and fit for unskilled labour only.

I4. Unstable and not fit for any employment.

Code Letter R (Respiratory System)

Great care is needed in categorising this system, particularly in the case of those to be engaged in mining, where there is a risk of silicosis, and in chemical industries, where there is a risk of the lungs being affected by toxic gases or fumes.

R1. This is a chest which is normal in all respects.

R2. There is evidence of slight variation from the normal, such as bronchial catarrh or poor expansion. These cases should not be employed where there is dust or gas hazard.

R3. Patients in this group are suffering from diseases such as chronic bronchitis or asthma and, if applicants for work where there is a respiratory risk, should be refused.

R4. This group comprises patients suffering from definitely incapacitating diseases, such as tuberculosis, and, if employees, should be pensioned off.

Code Letter V (Vision)

Vision is sometimes of great importance as a factor in placing employees. Certain jobs demand perfect vision, e.g., precision instrument work or where a complicated system of signals has to be watched.

V1. Normal vision. Can read 6/6 with both eyes, also small type at near range.

V2. Slightly below standard, but can be corrected with spectacles.

V3. Poor vision in both eyes, or loss of one eye. In the latter case the applicant must not be employed in any work where there is danger of damage to the sound eye.

Code Letter S (Skin)

If the applicant is to be employed in any work involving a risk of dermatitis, the greatest care should be taken in the examination of his skin condition ; such examination should include patch tests.

S1. No abnormality in the skin, no rashes, no past history of skin diseases or rash. Skin patch tests negative.

S2. No history of skin infection, but the skin tests are positive. The applicant must therefore not be employed where there is a dermatitis hazard.

S3. History of past dermatitis, or has rash on skin and reacts to skin tests.

The appropriate rating for each letter is inserted, during the examination, in the category space of the Medical Categorisation Form.

In the case of applicants for employment the applicant brings with him from the Labour Officer an "Application for Employment" card.

In the "Medical Officer's Remarks" section of this card are written any special notes on the categories which the medical officer wishes the labour officer to consider in deciding whether to employ the man or not.

Assessing the Job

The second aspect of the problem is the "Job Assessment" in terms of the categories. The prescribed standards are arrived at, in the first instance, by consultations of a small committee consisting of the medical officer, the departmental chiefs, the safety officer and the labour officer. Each job in the factory is considered in detail, and a standard code for the job is drawn up on the basis of the pooled information and opinions. This code is used as a basis for 12 months, during which the medical officer will have had time to categorise sufficient men to allow for comparison and reassessment of the job. The category values are, in the first instance, arbitrary, being established according to the committee's ideas of the desiderata of each job. These values vary considerably.

In order to clarify the method employed, the job of manual labouring is taken as an example. This being a heavy job, the applicant needs a high standard of physical fitness; therefore the physical grade should be P1. Similarly, as he will have much walking and standing to do, his locomotor standard should be F1. The next group, the ear, nose and throat system, is not of great significance for labouring and the Grade N2 will suffice. The intelligence grade will be 12 or 13. In a chemical works respiratory risks may be great; the grading needs will depend on whether the man is to do his work inside or outside the plant; if he is to work inside the plant the grade must be R1; if outside then R2 will suffice. Vision need not be perfect, as there is not likely to be any eyestrain; therefore the Grade V2 will be sufficient. The skin group requirements, again, depend on the type of material handled; if such material is capable of giving rise to dermatitis, S1 must be the grade: otherwise S2 will be high enough. These results, when recorded, will read:—

JOB : LABOURER

	P	F	N	I	R	V	S
Inside chemical plant	1	1	2	2	1	2	1
				or 3			

	P	F	N	I	R	V	S
Outside chemical plant	1	1	2	2	2	2	2
				or 3			

For recording purposes each job is given a category number, as shown below. If the categories of the candidate are compared with the job assessment categories, it is immediately possible to decide whether he is suitable for the job; examples of two candidates, one successful and the other unsuccessful, are given below:—

JOB : LABOURER IN CHEMICAL PLANT CATEGORY NO. 22

	Job categories						
	P	F	N	I	R	V	S
Names	1	1	2	3	1	2	1
J. Smith	1	1	2	3	1
T. Jones	3	2	1	2	2

On comparing these two men's categories with the standard categories for the job, it is obvious that Smith is able to fill this job. Jones, on the other hand, fails.

During the 12 months' trial previously mentioned, examinations are conducted on not only applicants for the different jobs, but men who are already employed in them.

Where individuals have been engaged for some years in the work, and do not come up to required standards, they are left in the job, and those categories in which they are below standard are entered in red; those in which they are above the requirements are entered in green; those in which they are equal to the standard are entered in black. The medical officer, when he has examined all the employees in a given job, then enquires from the departmental chief whether all men are doing satisfactory work. If they are, then the arbitrary standards first selected are obviously too high and must be lowered, as some of the old employees are certain to be below the required standard in one or more categories.

As an example, the job of fitter in the engineering department is taken and examined. The arbitrary standard first selected was as follows:—

P	F	N	I	R	V	S
2	1	1	2	1	1	2

Examination of the employees' categories, based on the red, green and black entries mentioned above, gave the following percentages:—

P	F	N	I	R	V	S
—	—	—	—	—	—	100

Above standard category 60 — — — — —

Equal to " " 20 80 60 — 75 80 —

Below " " 20 20 30 100 25 20 —

By enquiry and investigation it was discovered that all men engaged did their work satisfactorily; therefore the first arbitrary code was wrong and was revised as follows:—

P	F	N	I	R	V	S
2	2	2	2	1	2	2

Percentages based on this revised code were:—

P	F	N	I	R	V	S
80	80	60	—	—	80	100

Above standard category 80 80 60 — — 80 100

Equal to " " 20 20 40 100 75 20 —

Below " " — — — — — 25 —

Future applicants who come up to the revised standard will now be accepted for this job.

System Approved

The above scheme has been in operation for three years under the aegis of the writer, and has proved acceptable to applicants, employees and management.

The applicants and employees approve of it because they realise that it is not intended to exclude but to select and place them in the most suitable work.

The labour officer and departmental managers, whose co-operation is essential, welcome the scheme because it gives them a simple standard by which to judge the medical officer's decisions as they affect their own men.

Again, the recorded results of the examinations as a system of categories make valuable statistical data for any enquiry into the medical standards of the working inhabitants of a particular industry and give a cross-section of those standards for the men of employable age in the district where the industry is sited. As an example, the reasons for rejection of applicants are given below as percentages:—

Disabilities in group		Percentage
Physical	...	(P)
Locomotion	...	(F)
Ear, nose and throat	...	(N)
Intelligence	...	(I)
Respiratory system	...	(R)
Vision	...	(V)
Skin	...	(S)

Finally, when it is realised by all concerned, by applicants for work, by employees already serving and by the management, which term includes all staff from the works manager

(Concluded at foot of next column)

A Symposium on the School Leaver, the National Serviceman and the Industrial Entrant*

I. THE SCHOOL HEALTH SERVICE—THE FINAL PHASE

By H. M. COHEN, M.D., D.P.H.,

School Medical Officer, City of Birmingham

It seems rather strange at first to consider the School Health Service as functioning in the preparation of youth for the Services ; yet in a wider view, certain features towards this goal become evident.

In the last phases of school life, the main aim of the School Health Service—the promotion of health—becomes more evident. Over the years, the medical officers have the opportunity (which is also a duty) of examining all the children at school. No doubt we shall hear that the Services also provide an excellent opportunity for the study of healthy adults. In the schools, however, there is no previous selection and many children are seen who, though they complain of nothing, are, in fact, very far from a state of satisfactory health ; and that in order to find the root of the trouble and be of help, the medical officers build up a complete picture of the child in his total environment. This means piecing together information derived from a wide variety of sources, e.g., parents, the teacher, psychological tests, weight and measurement charts, and assessment of reports on home conditions.

The results are not always tangible but the scope is vast and the medical officers have the high reward of knowing that, instead of just trying to prevent children sinking below the average in health, they are actively helping them to rise to the full realisation of health which is their birthright.

It is of some interest to recall that in November, 1907, when the School Medical Service was about to come into operation, it was emphasised that the Service aimed, not merely at a physical and anthropometric survey or at a record of defects disclosed by medical inspection, but at the physical improvement, and as a natural corollary the mental and moral improvement of coming generations.

In the early days, the medical examinations quickly revealed a large amount of disease and defect which tended to overlay the preventive idea and the Service was concerned almost entirely with the care of established disease. Hence, in the later years, we have a restatement of the aims of the Service : much of it to be devoted to plans which have as their aim the inculcation of the laws of health, wise and proper nutrition, physical training and exercises adapted to the needs of the individual, proper hours of rest and sleep, and training in right habits and conduct. So during the years the aims of the Service have definitely changed and, indeed, are still changing. As an indication, the name was changed under Regulations following the Education Act, 1944, from the School Medical Service to the School Health Service, emphasising health and not disease.

Health education then, as we should expect, is a strong feature of the school curriculum. The School Medical Officer was asked to advise on this subject from the beginning

(Concluded from page 184)

down to the foreman, that the system is essentially one for selecting the right man for the right job, and that this system works, a great contribution has been made towards good employee-management relations. The man who has been placed by a method similar to the one described is more likely to be contented in his work than one who has been chosen without due consideration of all his characteristics. For the same reason, the foremen and managers feel that, under this system, unforeseen defects, either physical or mental, are less likely to appear at some future date, after time and money has been spent on training the employee.

* The three papers in this symposium were read to a meeting of the Services Group, Society of M.O.H., Birmingham, May 16th, 1952. (See Group report, p. 192.)

of the Service. Various memoranda were published by the Board and in 1928 the "Handbook of Suggestions on Health Education" appeared. This has passed through many editions and is still a very helpful guide. Latterly, of course, many first-class books have been published on the subject. With this wide background the School Health Service staff take an active part in the presentation of the subject.

Physical education is a natural corollary to health education. No doubt the audience will be aware from observation in their own Service how the old type of "P.T." has completely disappeared. The lessons now demand much less formal commanding by the teacher and the accent is on the development of individual treatment of the pupils. Organising ability is required to produce the quality of movement and improved standard of physical skills which are the present aims. Unnecessary tenseness during exercise has been replaced by natural and active, purposeful movement. Physical education now includes gymnastics, games, swimming, athletics, dancing and camping.

The value of school milk and school meals for the growing boy is too well known to need more than passing mention.

As it has been recently stated that mental ill-health accounts for approximately one-third of the discharges from the Army on account of invalidity, it is as well to discuss mental hygiene in the schools. It has been said that mental hygiene is concerned with the maintenance of mental health and the prevention of mental disorder. Accordingly it is of the utmost importance that this approach should receive proper recognition in the schools. As in the Services, group morale in the classroom plays a very important part, but even so, there will be cases of educational maladjustment who will need special help through the skilled team at the child guidance clinics.

Mental hygiene is also concerned with the educationally sub-normal and with the adequate help received at school, the subjects can take their place in the Services. There is one proviso, however : appropriate job selection is necessary. This is recognised also for all youths leaving school and the Juvenile Employment Department in conjunction with the School Medical Officers arrange for vocational guidance.

We now turn to the attention given to individual children. The ascertainment of their health is based on the periodical medical examination. These take place on at least three occasions during the school life of each child. The first takes place on entry to school, the second at the end of the primary stage or at the beginning of the secondary stage, and the third during the last year at school. Each child has a medical inspection record which follows him if he moves to another area.

As the examinations take place in the school, there is opportunity for full discussion with the teacher as well as with the parent. A comprehensive history is taken and any social details which may have a bearing on the child's health are discussed with the parents. As indicated earlier, this concept of social medicine is kept in mind as the interest is in the whole life of the child. These complete overhauls are valuable then as health appraisals and as an "audit" of the child's general condition. However valuable these periodical medical inspections are it is as well to remember that the child is not seen only three times during its school life. When the doctor visits the school to carry out the full examinations, the children, who have been previously noted as requiring treatment for any particular defect or requiring observation, are seen again. The parents or teachers or welfare officers can request the examination of other children for any particular reason. Furthermore, the scrutiny of the attendance register can indicate the need for the examination of other children. A survey of the children in the classrooms brings the visit of the doctor to a close. Incidentally, one distinguished School Medical Officer suggested a further visit to the playground as valuable information can be obtained by observing the children at play.

In between the doctor's visits to the schools, he is able to

see children at the school clinic. I should like to point out very strongly that not only minor ailments are treated at the clinics, but also children are brought by their parents in increasing numbers for general consultation.

The school nurse is a regular visitor to the school and is the connecting link between the doctor, the teachers and the parents.

As in the future, these medical records might have a wider use, I should like to mention that, at present, we classify the child's general condition into three categories : Good, fair (in the sense of the meaning "satisfactory") and poor. I note that the value of the Pulheems system of classification and assessment in the Army has recently been affirmed. Much of it, however, depends on subjective impressions and I doubt whether we should attempt some such classification in the schools. Improvements of the system, I am told, are on the way and it will be interesting to look at these, as in any case, the school classifications are also subjective.

We do not pay any particular attention alone to the weight and height of the children at the time of examination but continuous weighing and measuring of the children is helpful. At the same time, anthropometrical studies are of general interest as they throw up interesting and helpful information. For example, London boys and girls are heavier and taller than local children and from studies of local adults, there is the suggestion that there is a Mercian type. Furthermore, over the years, it has been noted that children are significantly becoming taller and heavier for their age. Yet as recent work has shown, adults in general do not show such differences so we can conclude that boys and girls are maturing earlier. This is important from many viewpoints and you may note this from the angle of pre-Service training.

How more specifically do we help the child with defects for after-school life with special reference to the Services ? For the delicate child, adequate provision is made at the open-air schools, either day or residential. Speaking here, in Birmingham, I may point out justifiably that the local authority maintain a school in the Swiss Alps at Davos for boys with chest defects. Local authorities have the power to send children away to convalescent homes for periods up to 12 weeks after recovery from acute illnesses.

The chests of all pupils aged 14 and over are examined at the Mass Radiography Centre and the value of this form of examination has now become well established.

No doubt you will also be interested in the M.R.C. investigation with the use of antituberculosis inoculation. Briefly, the school leavers who volunteer are tuberculin tested and of those who are found to be negative, a proportion are inoculated either with B.C.G. or vole vaccine. The Medical Research Council intend to follow up these children after they have left school for a further three years and, no doubt, you will be interested in the results when they reach the Services.

Turning to the special senses, vision and hearing are particularly investigated. From the point of view we are discussing this afternoon the testing of colour discrimination is very important. In my own experience, many youths are in this way saved from feelings of frustration in later years over their inability to join a much-fancied branch of a Service where accurate colour discrimination is essential. The testing of visual acuity also, apart from the provision of spectacles, helps to give the youths a balanced picture of their opportunities. By means of regular audiometric examination the acuity of hearing is ascertained. In many cases accurate diagnosis and adequate treatment clear up most of the defects discovered which, if unrecognised and untreated, may become a gross hindrance in later life. An attempt is made to clear up the running ear and I appreciate the difficulties this condition can cause in the Services.

Speech therapy clinics deal with cases of defect of articulation and stammering. The results are highly satisfactory and save the young serviceman from much discomfort.

Much has been said of the importance of foot health. Many defects of the feet which are seen during Service life could have been cured or at least have been minimised by proper care during school life. Many education authorities

appoint chiropodists to the School Health Service who consider that the most important chiropodial work with children lies in the prevention and correction of incipient deformities.

I wish I could say that the School Dental Service was enabling the boys to leave school in a dentally sound condition but you will know, of course, that there is at present a shortage of School Dental Surgeons. The overall picture, however, shows that within the last six months there has been an increase of 76 dentists in the School Dental Service, so I am hopeful the increasing volume of work which is being carried out will later give you less concern for the state of the recruit's teeth.

In conclusion, I trust that, even in this brief review, I have shown that the School Health Service takes its share in the preparation of boys for the Services.

II. SOME HEALTH ASPECTS OF NATIONAL SERVICE

By Lt.-Col. R. W. SCOTT, O.B.E., M.B., R.A.M.C.

Introduction

It is proposed to discuss eight aspects of the Army system which it is thought will interest those concerned both with school health and industrial health. The eight points which have been selected are :—

- (1) Medical examination and assessment.
- (2) Job selection.
- (3) Health education.
- (4) Physical training.
- (5) Remedial treatment for physical defects.
- (6) Preventive inoculations.
- (7) Documentation.
- (8) Periodical medical examinations.

Medical Examination and Assessment

In accepting a man into the Service, the two basic requirements are an assessment of his physical health and an assessment of his intelligence, aptitude, so that it is possible to get the round peg into the round hole. Let us consider first the basic physical requirements. The preliminary medical examination is carried out by the Ministry of Labour and National Service Medical Board and their examination is associated with the mass miniature radiography carried out in some cases by the Ministry and in other cases by the Army immediately after the recruit has entered the Service. There have been considerable developments in the system of medical examination since the end of the war, and with the development of the Pulheems system we have achieved a standardisation of medical examination between the three armed Services and the Ministry of Labour. It is not intended to spend too much time discussing the details of the Pulheems system. An attempt, however, will be made to try to summarise the main points.

The Pulheems system of medical classification provides an accurate means of assessing an individual's capacity to work under conditions of operational and climatic stress and strain. In this system bodily and mental functions are assessed under seven subdivisions or qualities. There are eight degrees of each quality, but all of these are not in use for U,L,H,M and S. The degree of each quality refers to functional ability, except in the case of hearing and eyesight where the degrees are related to definite standards of auditory acuity and visual acuity respectively. A pamphlet for medical officers gives general guidance as to which degree is associated with particular disabilities in each quality, although the emphasis throughout is on the functional ability and not on the degree of anatomical abnormality. The results of the assessment are shown in the form of a Pulheems profile. The production of the Pulheems profile is, however, only half of the system, because the next point is the relation of the Pulheems profile to particular trades and employments. This is done by laying down the requirements in terms of a Pulheems profile for all the various arms of the Service and all the technical trades within those arms for service at home or overseas. Having, therefore, decided the arm of

the Service to which an individual is to be posted, and knowing his trade or the trade for which he is to be trained, it is then possible to give the man a Pulheems employment standard, which is a short two-letter code to indicate the operational zones, climates, etc., for which he is eligible in his particular arm or trade.

Complete tables of Pulheems employment standards by arms and trades have been worked out separately for officers and other ranks, including the women's Services.

Job Selection

The medical examination on entry in fact produces a Pulheems profile of the individual. The next stage is to get some indication of the recruit's mental ability, educational standard, general intelligence, particular likes and dislikes, and aptitudes. These various factors are estimated during what is called "selection procedure," which takes place during the first few days in the Service. This selection procedure is not a medical responsibility, but that of the specially trained personnel selection staff, and it is not intended to elaborate on the methods that are used, which involve tests of intelligence, mechanical aptitude and knowledge, arithmetic, the use of words, the ability to understand complex instructions and carry them out, and manual dexterity in assembly tests. This is combined with an interview by a trained selection officer and the result of the tests and the interview and the record of previous attainments is that the individual is placed in the arm and type of employment in which he can most profitably serve the Army. It has been stated that this was not a medical task but, of course, the psychiatrists are frequently involved in selection procedure and a certain percentage of cases is referred to them for further opinions on intelligence.

When a man has passed his selection procedure and been allotted to a particular arm of the Service, he is re-examined by a Service medical officer who checks the medical assessment made by the civilian medical board.

Health Education

The recruit then starts his basic military training which includes a set programme of lectures and health education. It was found impracticable to give this instruction by medical personnel, and the lectures are in fact given by regimental instructors at the various training depots. The instruction is, however, standardised because the regimental instructors attend the Army School of Health where they have a special course on health education and are issued with lecture notes. Recently a series of film strips has been provided to illustrate these notes. The health education is also supplemented by films on personal and communal hygiene and a small pamphlet, "Your Health and You," which gives simple health instruction both at home and overseas, is issued to every soldier. Every effort is also made to instil health education into the young officer so that he can use his knowledge in looking after his men.

Physical Training

An important part of basic training which has a powerful effect on health is physical fitness and the recruits are put through set tables of physical training under an experienced Army Physical Training Corps instructor. These tables are carefully graded so that the development of the muscles is graded to lead up to a series of simple tests of physical fitness which are carried out later in the training period. It is hoped in the Service that health education, physical training and physical development have an influence on the individual which continues beyond his Service life and is of benefit to him in civil life afterwards.

Remedial Treatment for Physical Defects

An important feature of Army life, where the physical training expert and the doctor worked together, was the physical development centre. These were instituted during the war with the idea of giving special physical training, diet and remedial instruction to recruits who were below the normal physical standards. The scheme was inaugurated, of course, as a means of saving manpower at a time when manpower was very valuable, but these centres did extremely

good work in improving the physical health and bearing of some of the recruits who presented themselves. It was found impossible, however, to retain them in peace-time. A limited amount of this work continues in convalescent depots, and in certain physical training centres conditioning courses are held to improve physical standards, but these are very small. Normal remedial work for selected cases is of course carried on in the physiotherapy departments of military hospitals. These only treat the particular disability. The physical development centre treated the whole individual. It is considered that the physical development centre should be a very important feature of national life and if they cannot be run by the Army, they should, it is felt, be run by some other organisation such as the Ministry of Education or the Ministry of Labour and National Service, because there is no doubt that there is a great need for physical development of many of our youths suffering from such conditions as minor foot deformities, postural defects, underweight, etc.

It was apparent from Army experience that while good work could be done with individuals over 18 years of age, it would have been preferable if the physical development course could have taken place at an earlier age. Possibly medical officers in the School Health Service and in industry may feel that there is a need for physical development centres to which "school-leavers" and young industrial workers could be sent.

Protective Inoculations

During the basic training period, protective inoculations are carried out. The Army routine is to give protection against TAB, tetanus and smallpox, and all recruits are Schick-tested and immunised against diphtheria, if they are susceptible. These are the basic inoculations, others may, of course, be given on going overseas. All inoculations are voluntary.

Documentation

Documentation is of considerable interest and importance in the School Medical Service. So far as the medical documentation of the soldier is concerned, very considerable advances have recently been made and agreement between the three armed Services as to medical documentation has been achieved. The essential feature of the system is that every man has two medical envelopes, one of which is held centrally in London and the other travels round and is held by the man's unit and whatever incident occurs to the man, whether it is a medical examination, a medical board, a downgrading, or an upgrading, an out-patient consultation, or admission to hospital, the documents are made out in duplicate and one copy remains in the envelope with the man's unit and the other is forwarded to London and placed in its master envelope.

Periodical Medical Examinations

A word on routine re-examinations for physical fitness may not be out of place. The original Ministry of Labour assessment is checked on actual entry and again at the end of recruit training, and also before going overseas. Regular annual re-examination is carried out for senior officers and senior W.O.s, and for all ranks who are in the lower medical categories. It is hoped to introduce periodical M.M.R. examinations as soon as practicable.

Finally, when the National Service recruit leaves the Army he is given a detailed medical examination of which a record is kept.

III. YOUTH IN INDUSTRY : TO NATIONAL SERVICE AND BACK

By JAMES A. DUNCAN, M.B., C.H.B.,

Works Medical Officer, Imperial Chemical Industries,
Witton, Birmingham, 6

The entry into industry by those leaving school marks an important day in their life story ; exciting, yet a little awe inspiring. Upon the reception given to these boys and girls and their management subsequently depends the success of the transition from school to factory. This success may

later be measured by their stability in industry, that is the labour turnover. As we are considering, this afternoon, the supervision of young persons prior to military service and their return therefrom, my comments will be confined to boys.

During the past 15 years a very great change has taken place in the attitude towards the boy entering industry. Before the last war there was, in the main, no sound educational policy after leaving the elementary school, provided either by local authorities or by industrial concerns. The day continuation school, or works county college as it is now known, was a dream. Apprenticeship schemes such as are available to-day were not common. No information service existed to bring the company's policy—the prospects it offered, its amenities, educational schemes, canteens, etc.—to the notice of the young person. The labour policy was not yet developed to give the lad the chances he desired. The blind-alley job, learning by picking up from older men on the job and the cheap labour angles were the order of the day. Now the situation is very different and the young person's place in the scheme of things is recognised. During the last 10 or 15 years many schemes have been initiated to make good the omissions of the past.

In the organisation to which I belong great strides have been made. Apprenticeship schemes have been set up, day continuation schools formed in conjunction with the Education Department of the local authority; youth clubs have been fostered as well as such welfare measures as subsidised meals in the canteens, free dental services and medical supervision.

As far back as 1937 my department realised that the high labour turnover experienced then was in a large measure due to the lack of facilities for learning a trade, and the general attitude towards the young person by both supervision and management. A scheme of periodic review was instituted, whereby all those under 16 years of age were seen three-monthly by a medical officer, as an attempt on the part of the Medical Department to overcome, so far as they were able, this apathy. It served to observe the development of the boy physically and to give timely advice about conditions which could be remedied. Sometimes inter-departmental troubles involving the boy might be disclosed by him at such a review, and these could be often smoothed over by a friendly word from the medical officer to those in charge. Within six months of the commencement of this scheme the labour turnover had fallen by at least 10%. This was in some measure, I am sure, due to the fact that someone had taken a personal interest in the boys.

At this point I might be permitted to outline briefly our present policy with regard to the employment of boys. Practically all the boys entering our employ are taken on to the works payroll. They are drawn mostly from secondary modern schools, but a few come to us from the junior technical colleges or secondary grammar schools. Last year 90% of the intake were between 15 and 16 years of age, and apart from four boys appointed to the staff, none was taken on between 17 and 18 years, the reason primarily being that boys of this latter age group become liable for military service just when time and effort spent in training could be expected to show some return. The large majority of those joining the company have relatives already working with it.

During their first weeks with us each new batch of boys are medically examined, receive several tests designed to grade their intelligence, and a short introductory course lasting a week, which is designed to familiarise them with the company's activities and amenities, including such subjects as pay, safety, security, recreation, etc.

For the first year they attend the works county college (day continuation school) and reports of their progress are obtained at the end of each term. These, together with reports from their departmental heads as to their conduct and time-keeping, are summarised. Those selected as suitable candidates for apprenticeship are, in addition, given some special tests to determine mechanical and manipulative ability.

Practically all those coming into our factory hope to be apprentices, and recruitment is largely to this end. Only a

small number find their way into unskilled tasks. Most of those who do not reach the required standards leave to try to gain a training elsewhere. Those selected for apprenticeship attend a six weeks' trade selection course during which time they see all the trades in the factory and have lecture demonstrations by works foremen. The interest of the boy is judged by simple tests at the end of each session and at least 20% change their minds as to the trade they wish to learn. In addition to training in the apprentice school, practical experience is gained in the factory under the direction of skilled tradesmen and time is given for study at technical colleges.

We have a mixed youth club open to all, and in addition facilities for football, cricket, athletics and boxing which are a part of the recreation club. There is even a cycle speedway.

All under 18 years of age are given subsidised meals, and for eighteenpence can have a meat dish with two vegetables, and pudding. In passing I might mention that our meals are subjected to analysis at regular intervals by a biochemist in our research laboratories. From the foregoing it is obvious that the boys coming into our employ do not represent a true cross-section of the community.

During the three-year period from 1949 to 1951, 288 boys were examined prior to employment, and of this group 127, representing 44%, were perfectly fit. The criteria of "perfectly fit" are stringent. In this period no child was found unfit for employment.

The list given below gives an indication of the incidence of some of the defects noted during examination in those who were not regarded as "perfectly fit."

	Incidence of defects
Visual acuity 6/9 or less in one or both eyes	33
Colour blind	8
Monocular	2
Ear conditions—Wax	19
Otorrhoea and perforations	8
Mastoidectomy	5
Defective teeth and gums	39
Heart lesions—Mitral stenosis	2
Congenital heart (patent ductus arteriosus)	1
Lung lesions—Healed pulmonary tuberculosis	1
Asthma	2
Chorea	1
Undescended testicle	1
Varicocle and hydrocele	4
Feet conditions—Corns	4
Callosities	3
Hallux valgus	6
Pes planus	4
Bromidrosis	11
Hammer toes	2
Skin conditions (including acne—25)	36
Posture (scoliosis, kyphosis, etc.)	11
Physique (nutrition, under-developed)	14
Over weight	1

In many cases more than one defect was recorded. It will be noted that practically all the defects are of a relatively trivial nature and can be remedied. Although I have not investigated the progress of these boys during subsequent years, my impression is that there is a definite improvement in their physique and fitness. In addition to a pre-employment examination, all those on the works payroll are, under the provisions of the 1948 Factories Act, Section 1, re-examined annually up to the age of 18. This scheme has, in my own factory, been extended to boys on the staff. Under Section 126 of the 1937 Factories Act, a company can apply to H.M. Chief Inspector of Factories for their medical officer to be the appointed factory doctor so far as young persons are concerned. By virtue of this arrangement we are able to combine both the statutory medical examination and the company's pre-employment examination on entry into our employment and the annual re-examinations thereafter. As appointed factory doctor I am privileged to

receive a copy of the School Medical Officer's report if that is necessary. The annual re-examinations have largely replaced the scheme of regular reviews to which I alluded earlier in this talk, although I do try to have a chat with each boy about six months after being taken on.

In addition to any medical supervision our Dental Department, which is staffed by three full-time dental surgeons, excellently equipped, including x-ray facilities and a dental mechanic's laboratory, gives special attention to those under 18. We have, too, a visiting ophthalmologist and a chiropody service. Besides this there is the normal industrial health organisation, including medical department, equipped with x-ray facilities, staffed by whole-time doctors and nurses, and four ambulance rooms in various parts of the factory, staffed also by nurses.

Health supervision is only one facet of the scheme for the care of young persons in industry. There is the closest liaison between all those concerned in their health, education, training and supervision, and this has done much to make the scheme so successful.

Although the National Service Act was passed in April, 1947, it was not until some 18 months later that its implications, so far as industry was concerned, were appreciated, e.g., apprentices presented certain problems; there were those who broke their indentures to do their service or those who, having completed their training, were unable to follow their trade on joining up. Some employers feared that the Reinstatement Act might embarrass them. Lads with only a month or so with a firm would have to be employed to the possible detriment of lads with more service and therefore more experienced, but who had not been called up.

As contact between the Services and industry developed and they got to know each other better, it became apparent that they could help each other to get the best from peace-time conscription. If lads were prepared for Service life before they were called up then the task of training a soldier, airman or sailor in such a short time would be eased. Similarly, if the lads made full use of the educational, cultural and sporting facilities available to them in the Forces, then they would return as better men to industry.

During 1949 several firms began to interest themselves in solving these various problems by running Service courses in their factories shortly before each registration day. In the case of my own organisation the first scheme began in 1950, some 18 months after the first experiments were carried out by other firms, notably Newton Chambers, of Sheffield.

Early in 1950 a member of the personnel staff was given special duties in connection with national servicemen. The young man selected had had military service and also had received a Military Cross. In fact, it has always been a policy to select those with Service experience for all jobs which entail the handling of men returning from military service. The National Service Supervisor spent some six weeks visiting various Service establishments, including the Admiralty, War Office and Air Ministry, the Ministry of Labour and National Service (both at London and regional level) and the headquarters of the Bureau of Current Affairs. The information collected related to conditions of living, training programmes, educational and cultural facilities, sports, pay and leave. In short it was all information likely to be useful to the would-be national serviceman.

The scheme adopted includes :-

1. A pre-service preparation course.
2. Service follow-up.
3. Reception and resettlement after service.

The pre-service scheme includes a visit to a nearby barracks to give a glimpse of Army life and conditions, and a talk by a senior officer, usually of Colonel rank, about Army life. Discussions follow as to the types of trades and openings available. Most lads are prepared to make a go of their service period, but some would far rather drift along getting nothing and giving nothing. It is hoped that the pre-service course will help to banish this attitude.

During the period of National Service a copy of the company's magazine is sent to each member, and at about

six-monthly intervals the National Service Supervisor writes to each one. The letters and magazines are much appreciated for they form both a formal and informal contact with the place where they used to work and to which they hope to return. An attempt is made by the supervisor to provide a contact between one serving man and another. It often happens that their pals are stationed quite near without their knowing it. During leave periods the lads are encouraged to call upon the supervisor. In this way a useful dossier is compiled about each one, which may be useful during reinstatement period.

After release from military service each one is interviewed by the Resettlement Officer who is charged with the task of seeing him into work which is suitable and acceptable. Most, however, are only too anxious to settle down in their old jobs in their old departments.

Problems so far have been few and the resettling process less troublesome than after the war. Movements in the Services are less, there is less day-to-day change, less excitement and not the same promotion. The sort of problems likely among returning national servicemen include late developers, i.e., those who blossom in the Forces and are no longer prepared to take up work as before, wishing something better; apprentices who become commissioned in the R.A.F. or R.N.A.S., and apprentices who have broken their indentures.

I might quote a problem of reinstatement which confronted our Resettlement Officer. It concerned an apprenticeship carpenter who broke his indentures to do his national service. By the Reinstatement Act he could be resettled as a learner carpenter, but no longer bound by indentures provided that a period of 12 months would teach him his job. However, he was no longer interested in carpentry for he had spent two years in the R.A.F. as a clerk and equipment assistant. His departmental head agreed to release this young man and a suitable job was found in our External Publicity Department as a clerk.

It will be appreciated that our reinstatement problems are unlikely to be great, for we are dealing in the main with lads who are already trained tradesmen. The number of unskilled lads entering the Services from our employ at 18 years of age are very few. Smaller firms who employ a relatively larger proportion of lads will no doubt have much more difficult tasks.

I do feel that, whatever the size of the organisation, the returning national serviceman should be sympathetically handled by someone who understands his point of view. This, and an understanding management, will do much to avoid the more obvious pitfalls of reinstatement.

DISCUSSION

Dr. Stewart said that, like Dr. Duncan, he felt there was little contact between industry and the School Health Service: the former was, of course, still a skeleton service in this country. He wondered if Dr. Cohen had many requests for information from appointed factory doctors. Again he wondered if Col. Scott could instance any degree of contact between Ministry of Labour and the Army Medical Services.

Dr. Cohen welcomed the question of liaison. It was only too true that a vast amount of knowledge was collected during a child's years at school, but it was not subsequently used to any extent. It was not known to which factory a child went or what doctor should have the information; if it were known, the School Health Service could readily undertake to pass on the necessary information. So much was passed on to the Youth Employment Service, but it did not reach the factory doctor in the way the School Medical Officer could give it. Any enquiries would always be welcomed.

Col. Scott said that he could not readily suggest a scheme of co-ordination—there were so many and varying standards among those who came into the Army. He hoped, however, that ultimately there might be a nation-wide Industrial Health Service linked with the National Health Service. The Ministry of Labour also might develop an interest and arrange for factory information to be available at medical boards. A nation-wide and all-embracing Health Service must be the first step if information gained was to follow the individual through the various stages of his life.

Dr. Duncan then assured Col. Scott that the factory doctor did keep records—including the youngsters between 15 and 18.

All that was required was the machinery of co-ordination. In reply to the chairman, Dr. Duncan said that information was available if the factory doctor asked for it. This was easy where he was concerned, but where the factory doctor was a part-time officer and a busy general practitioner at the same time he might not have the time or the clerical facilities to enable him to apply for information.

The chairman thought it tragic that so much time should be spent on obtaining information which was subsequently not available where it was wanted.

Air-Comm. Lee Potter commented that individual medical histories were invariably asked for and obtained where there was a need for them from the point of view of treatment of an individual. The R.A.F., however, frowned upon the keeping of statistics merely to permit someone some time to write a paper. He then referred to psychological tests and asked for guidance. The lad with some mechanical interest was easy to place, but what about the budding Michael Angelo or Robert Burns?

Dr. Frizelle referred to a recent paper given to the Group by Dr. Gwynne Morgan, in which he described a revised Pulheems system which he had devised and found successful in the various works with which he was associated.

Dr. Cohen felt that the difficulty was to persuade the youngster to take the job he was clearly best suited for.

Dr. Green asked if there was any evidence of the cause of breakdown in lads found perhaps after a year's service to be of subnormal mentality. He had come new into a community drawn from a much wider range than he had previously experienced; had the physical strain during training ultimately beaten him at a time when he was just about to convert to some degree of solidity? It was an important problem from the point of view of the Medical Officer of Health.

In reply, Col. Scott thought environment was a most important factor; some people meeting infection not experienced previously. Tuberculosis in Gurkhas was a case in point. In the Services a start had been made with BCG immunisation, but so far it had been restricted to nursing personnel.

Dr. Billington then asked Dr. Cohen if he advocated annual re-examination by M.M.R. for those attending colleges after leaving school. He had himself experienced some difficulty in getting the mobile unit to visit and revisit the works of his firm, and he was very concerned with the question of need for follow-up in young people. The National Association of Boys' Clubs was making some effort and medical officers were voluntarily associating themselves with individual clubs. The main difficulty lay in the smaller factories with minimal medical supervision.

Air-Comm. Lee Potter then asked whether the problem of "under weight" and medical defects could not be dealt with before the age of 18. He would like to see the under-weight boys given five to six weeks' physical training and extra good food at some camp set apart for the purpose. Even a 10-day P.T. course led to a tremendous improvement in lads joining the R.A.F.

Dr. Cohen replied that he had been particularly interested in just such a scheme as this. The School Health Group had indeed put up a proposition to the Minister of Education—an open-air school for boys with bad physical development, but it had been turned down for economy reasons.

CORRESPONDENCE

PREVENTIVE PSYCHIATRY

To the Editor of PUBLIC HEALTH.

Sir.—Dr. Warren's article in your July issue on preventive psychiatry will have aroused much interest, especially among those members of the Society who are engaged in maternity and child welfare work.

The journal *Public Health Nursing* for July, 1952, contains an account of some methods which were tried in Vancouver child health centres (infant welfare clinics) to introduce preventive psychiatry or "anticipatory guidance" into our programme for infant care. I am sure that anyone who has been stimulated by reading the one article will also find a great deal of interest in the other.

Yours faithfully,

JEAN M. MACLENNAN.

306 Abbott Street,

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July 30th, 1952.

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SOCIETY OF MEDICAL OFFICERS OF HEALTH

The Annual Dinner

The annual dinner will be held on Thursday, October 23rd next, at the Piccadilly Hotel, London, W.1, at 6.45 for 7.15 p.m., with the new President (Andrew Topping, T.D., M.B., F.R.C.P., D.P.H., Dean of the London School of Hygiene and Tropical Medicine) in the chair. The principal guest will be Mr. Iain Macleod, P.C., M.P., Minister of Health.

It is hoped that there will be a large attendance of members and their guests. The charge for tickets will be 2s. each (for those paid for at the time of application up to October 16th); 2s. 6d. each where applications and/or remittances are received after October 16th. This is inclusive of gratuities but not of drinks and cigars or cigarettes. Evening dress with decorations.

Applications for tickets with remittances should be sent as early as possible to the Executive Secretary, Society of M.O.H., Tavistock House, Tavistock Square, London, W.C.1.

NEW SOUTH WALES BRANCH

President: Prof. E. Ford (School of Public Health and Tropical Medicine, Sydney, N.S.W.).

Hon. Secretary: Dr. E. S. A. Meyers (Dept. of Public Health, Sydney, N.S.W.).

A meeting of the New South Wales Branch of the Society was held in the Council Room, B.M.A. House, Sydney, on April 30th, 1952. Twenty-two members and guests were present.

Poliomylitis in Australia

Dr. H. G. Wallace, Deputy Director-General of Public Health, New South Wales, after a short description of the historical aspects of poliomylitis, stressed the changes which had taken place in the epidemiological picture from about 1880 onwards. Formerly regarded as little more than a medical curiosity, poliomylitis had become a periodic scourge in many parts of the world. Similarities and differences between the causative organism of poliomylitis and other neurotropic viruses were briefly discussed. The ecology of the virus in the light of present knowledge, and theories of the underlying causes of epidemic outbreaks, were then discussed on the basis of ascertained facts.

Turning to the experience of poliomylitis in Australia, a plea was made for more intensive studies of past epidemics. Diagrams showing the course of epidemics in each of the six Australian States during the past 25 years were exhibited. Following the recognition of sporadic cases from 1887 onwards, a minor epidemic occurred in 1895 at Port Lincoln in South Australia. The first widespread epidemic was that of 1903-04, apparently commencing in Sydney and spreading to rural districts of New South Wales, and thence to Queensland, Victoria and South Australia, the disease being almost wholly confined to children under five years of age.

Charts showing the age-incidence during the last 10 epidemics in New South Wales indicated clearly the tendency of the disease to affect an increasing proportion of those in the higher age groups. The increasing prevalence of the disease in succeeding epidemics was a disquieting factor and some possible reasons for this were mentioned. The case-mortality had risen in succeeding epidemics to a peak of over 25 per cent. in the epidemic of 1929 and had thereafter declined. The recent epidemic of 1949-51 had been for the greatest ever to have occurred in New South Wales, involving more than 2,000 persons. Curious differences, for which, up to the present, no adequate explanation had been found, were shown to have existed between the behaviour of the disease in the metropolitan and in extra-metropolitan districts, varying from year to year in the different age and sex groups.

Since the disease became notifiable in New South Wales about 40 years ago, records indicated its seasonal prevalence, March being the month of highest incidence and September that of the lowest. On the basis of previous experience of the disease in Australia, a guarded forecast of the probable course of epidemics in the more immediate future was made. Although the outlook at present was disturbing, there were grounds for anticipating more effective control as an outcome of various methods of investigation now being followed.

Dr. N. J. Symington spoke of some difficulties and problems on the diagnosis of poliomylitis, and of the present method of dealing with suspected cases. Recent research in tissue culture was described and possible future developments mentioned.

Bornholm disease and allied conditions were then discussed. Indications for respiratory treatment and practical points in treatment of patients in respirators were explained.

Following a number of questions to the speakers, a vote of thanks was moved by Prof. Harvey Sutton and seconded by Dr. L. Pudney.



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President: Surg.-Capt. D. Duncan, R.N., O.B.E.
Hon. Secretary: Dr. G. M. Frizelle (Asst. Dean, Lond. Sch. of Hyg. & T.M.).

Provincial Meeting, Birmingham

This meeting was held in the Council Chamber, Birmingham, on Friday, May 16th, 1952. In the absence of the President, Dr. Andrew Topping, F.R.C., occupied the chair. Amongst the members and guests attending were Maj.-Gen. T. Young, C.B., O.B.E., Air Comm. P. B. Lee Potter, O.B.E., Col. E. J. S. Bonnett, late R.A.M.C., Maj. G. M. Curtis, R.A.M.C., Lt.-Col. R. W. Scott, O.B.E., R.A.M.C., Drs. M. Burn, M.C., M.M., H. M. Cohen, J. A. Kerr, V.R.D., W. Dodd, P. R. Kemp, G. M. Frizelle, F.R.C., H. F. Green, J. J. Landon, R.W. Elliott, E. L. M. Millar, W. Nicoll, W. R. Martine, O.B.E., F.R.C., D. Stewart (Austin Motor Co. Ltd.), J. A. Duncan (I.C.I.) and J. G. Billington (G.E.C.). Twenty-eight apologies for absence were received.

Dr. Donald Stewart, introducing the speakers, welcomed such a meeting as giving unique opportunity for the liaison so badly needed if there was to be effective continuity in the medical supervision of the country's youth throughout the various age groups from childhood to manhood. Dr. H. M. Cohen (School Health Service), Lt.-Col. R. W. Scott, O.B.E., R.A.M.C., and Dr. J. A. Duncan (I.C.I.) then gave papers which were followed by a most animated and valuable discussion in which Dr. Topping, Dr. Stewart, Air Comm. Lee Potter, Dr. Frizelle, Dr. Green, Dr. Billington and the authors of the three papers took part.

[The papers and discussions are published on pages 185 to 190 of this issue.]

At the close of the meeting and after Maj.-Gen. Young had moved a vote of thanks to Dr. Topping for taking the chair, a number of members adjourned to the Lord Mayor's Parlour, where they were received by the Lord Mayor, Ald. R. C. Yates, J.P.

Back Numbers of PUBLIC HEALTH.—The Executive Secretary would be most grateful to receive from members unwanted copies of the following issues of the journal, in order to replenish stocks at the Central Office: September, October and November, 1951; March, April, May and June, 1952. Cost of postage will be refunded.

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BOOK REVIEWS

River Pollution: The Buckland Lectures. By H. D. TURING. (Pp. 93. Price 7s. 6d.) London: Edward Arnold & Co. 1952.

The Buckland Lectures have a peculiar interest to the medical profession because they were founded by the late Frank Buckland, who was himself a medical man and an uncle of our esteemed friend and colleague Dr. Mervyn Gordon, C.M.C., F.R.C. After a successful career at Oxford, Buckland resigned his commission as an assistant surgeon in the Life Guards in order to devote his time entirely to the scientific study of fish, particularly the salmon, and to the preservation of our rivers. So successful was he in his chosen work that he became Inspector of Salmon Fisheries, which post he retained until his death in 1880.

The Buckland Trustees could have made no better choice for the series of lectures now published nor one more in harmony with Buckland's life-work than that of Mr. H. D. Turing, whose great services to the purity of our rivers and to the angling community were so unfortunately ended by his untimely death in 1950. The lectures now published constitute a fitting memorial to this work and they have lost nothing of their value from the sympathetic editing by the author's daughter.

In the first few pages the author has expressed in language that all can understand the influences that permit of the self-purification of our rivers and enable them to support that infinite variety of minute animal and vegetable life which Nature intended that they should have and without which they can neither carry a good head of fish nor provide the beauty and solace that we expect to find along our waterways. Those whose work leads them to the pleasurable study of such matters will not cavil at minor inaccuracies in scientific treatment, nor will the lay mind find anything but the easiest of travelling in the final chapter dealing with the pollution laws.

The three lectures deal with estuary pollution, the pollution of inland waters and the pollution laws, all of which subjects are closely related to the public health. Many of our domestic water supplies derive from surface water sources, the increasing pollution of which throws an additional hazard upon the health of those who consume them. It is idle for us to ignore this fact on the grounds that polluted waters can successfully be purified, and few of those concerned with such matters would deny the principle so wisely enunciated by the Ministry of Health that whether or not purification treatment is given the raw water should be protected from pollution. This small volume is therefore one in which we all have an interest and its message is conveyed to us in a manner which adds enjoyment to our instruction.

This little book will find a home on the shelves of all who love the country and its endeavour to retrieve something of the amenities that have been lost through the pollution of so many of our rivers will be welcomed.

Insects and Hygiene. The biology and control of insect pests of medical and general importance in Britain. By JAMES R. BUSVINE, Ph.D., D.Sc. (Pp. 482, with 58 illustrations. Price 30s.) London: Methuen & Co., Ltd. 1951.

This book deals in very great detail with the structure and classification of insects found in Great Britain, and also with the anatomy, physiology and ecology of these creatures. Special sections of the book discuss mechanical, physical and chemical methods employed in the destruction of insect pests, while useful information is supplied on propaganda and on the legal and commercial aspects of the problems at issue. Several chapters are devoted to the life histories of specific insect pests and to the control measures indicated. There are extremely useful biological and chemical appendices and an adequate index. The illustrations are clear, attractive and judiciously spaced.

"Insects and Hygiene" contains a mass of up-to-date, accurate information which should prove of great practical use to Medical Officers of Health and Sanitary Inspectors and, indeed, to anyone interested in applied entomology. The text is very well written and is easily followed, in spite of the detailed consideration given to each section.

Public Health is the Official Organ of the Society of Medical Officers of Health and a suitable medium for the advertisement of official appointments vacant in the health service. Space is also available for a certain number of approved commercial advertisements. Application should be made to the Executive Secretary of the Society, at Tavistock House South, Tavistock Square, W.C.1.

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Simultaneous immunization of children against whooping-cough and diphtheria is now widely practised, and reports from various parts of the world have suggested that during the poliomyelitis season it is advisable to avoid a mineral carrier. Pertussis Vaccine and Purified Diphtheria Toxoid are now supplied in combination, in buffered saline, without a mineral carrier.

Diphtheria-Pertussis Prophylactic* is prepared in the Wright-Fleming Institute of Microbiology,
St. Mary's Hospital, London, W.2.

* Distinguishing mark 'W.D.P.' (in red letters).

Sole Agents:

PARKE, DAVIS & COMPANY, LIMITED. Inc. U.S.A.

HOUNSLOW, MIDDLESEX Telephone: Hounslow 2361





INDEPENDENCE DAY 1904

The usual high spirits of young Americans, the usual 4th July fireworks, the usual blank cartridge and firework wounds—and next week, no doubt, the usual 95 per cent of deaths among those contracting tetanus. But no! In the year 1904, every person who received a prophylactic dose of antitetanic serum survived.

Since 1904, profound advances have been made in the prophylaxis of tetanus. Due in no small part to work at The Wellcome

Research Laboratories, the dose has been reduced from the large doses then necessary to the 1-3 c.c. used today, the product is many times more effective, and serum reactions have been reduced to a minimum.

Note. 'Wellcome' Tetanus Antitoxin is now labelled in terms of the new 1950 International Unit which is twice the strength of the old (1928) unit and is therefore equal to the U.S.A. unit.

'WELLCOME' TETANUS ANTITOXIN



Prepared at THE WELLCOME RESEARCH LABORATORIES, Langley Court, Beckenham, England
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